The background is a deep blue gradient. On the left side, there is a bright, glowing sun that creates a lens flare effect, with light rays extending across the sky. A thin, white horizon line separates the sky from the water below. The water is a darker blue with subtle ripples and reflections of the light from the sun.

What can you do  
to protect  
your drinking water?

# Major local threats to groundwater

- Water overuse could deplete aquifer
- Pollution from:
  - Garden chemicals: pesticides & fertilizers
  - Septic systems: nitrates, household chemicals
  - Motor oil
- Development, impervious surfaces
- Population growth
- Climate changes

# What local governments are doing to protect groundwater

- Redmond-Bear Creek Groundwater Protection Committee
  - Cooperative effort of cities, water districts & King County
  - Scientific research: hydrogeologic mapping, surface water-groundwater relationships
  - Education & outreach
  - Policy analysis, regulatory research

# What local governments are doing to protect groundwater

- Critical Aquifer Recharge Areas
  - Overlie significant groundwater resources (e.g., public wells)
  - Protect from contamination
  - Protect groundwater recharge
  - Ordinances primarily affect new development

# What local governments are doing to protect groundwater

- Redmond has 5 shallow groundwater wells
- 40% of city drinking water
- Wellhead protection ordinance
- Hazardous materials questionnaire for businesses

# What local governments are doing to protect septic systems

- Health Department provides education, information
- New initiative from Hazardous Waste Program to collect medicines
  - Group Health hospital pharmacy in Redmond
  - Both prescription & OTC

# What you can do

- Conserve water inside & outside
- Protect your septic system
- Reduce use of pesticides & quick-release fertilizers
- Reduce impervious surfaces

# Q: Which home water uses have greatest conservation potential?

- Daily indoor per capita use: 69.3 gallons
  - Showers 11.6
  - Clothes washers 15.0
  - Dishwashers 1.0
  - Toilets 18.5
  - Leaks 9.5
  - Faucets 10.9
  - Baths, other 2.8

# A: Greatest home conservation potential

- Daily indoor per capita use: 45.2 gallons
  - Showers ~~11.6~~ 8.8
  - Clothes washers ~~15.0~~ 10.0
  - Dishwashers ~~1.0~~ 0.7
  - Toilets ~~18.5~~ 8.2
  - Leaks ~~9.5~~ 4.0
  - Faucets ~~10.9~~ 10.8
  - Baths, other 2.8 2.8

# Tips to save water in the home

- Fix leaky faucets & toilets
- Wash full loads of laundry & dishes
- Don't prerinse dishes
- Shorten your showers
- Take showers instead of baths
- Don't leave water running

# Protect your septic system

- Could cost up to \$15,000 to replace failing system
- Be water smart
- Inspect and pump your system regularly
- Newer systems may require annual pumping

# Don't put these in your septic system

- **Can't decompose in tank**

- Grease
- Cooking fats
- Newspaper
- Paper towels
- Rags
- Coffee grounds
- Sanitary napkins
- Cigarettes

# Don't put these in your septic system

- **Can harm your tank's functioning & pollute groundwater**
  - Solvents
  - Oils
  - Paint
  - Pesticides
- **Are unnecessary and don't improve performance**
  - Septic tank additives

# Septic system “don’ts”

- No vehicles or heavy equipment on tank or drainfield
- No excess water; divert water from roofs, driveways, patios
- No impermeable materials—plastic, concrete, patios, decks—over drainfield
- No deep-rooting plants over drainfield (grass is best cover)

# Landscape watering tips

1. Act like Goldilocks: just right amount of water

- Too much water can drown plants
- Too little water can weaken new plants



2. Water slowly & deeply for healthy plants

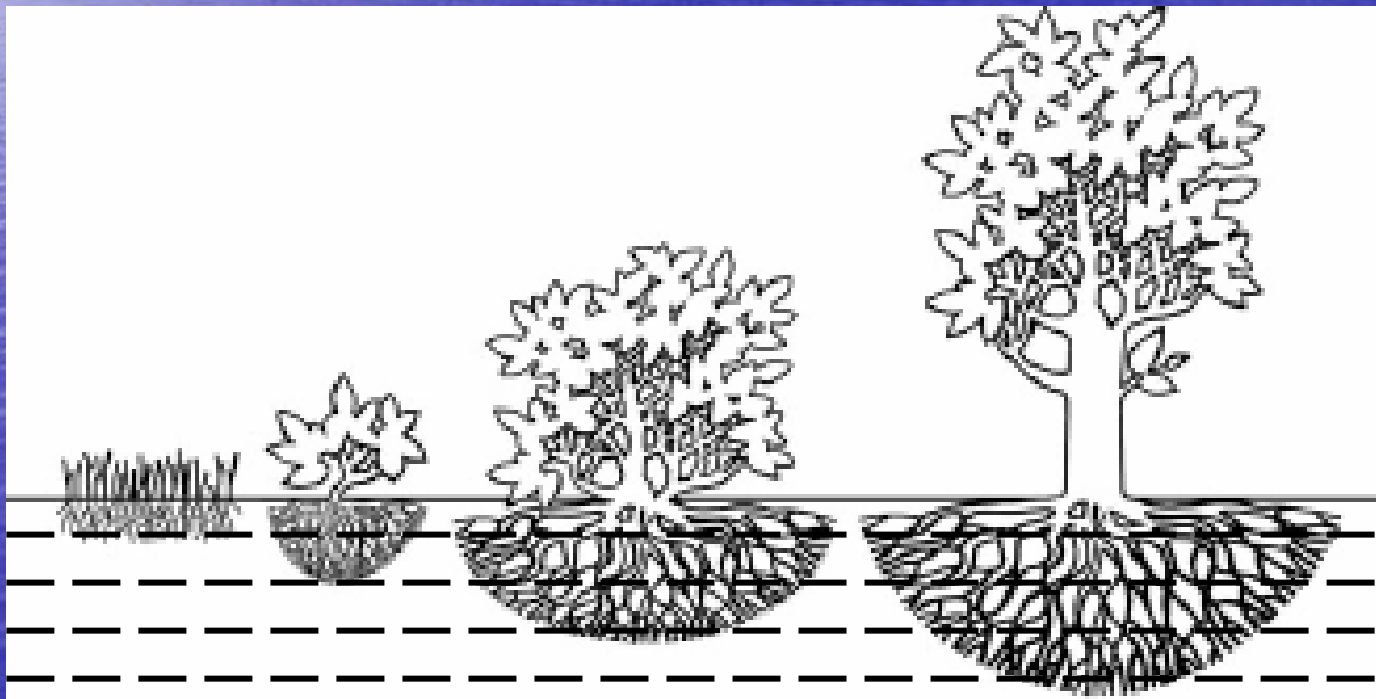
# Landscape watering tips

3. Water entire root zone, then let it partially dry out

Q: Where is a tree's root zone? Where should you water a tree?

# Landscape watering tips

A: Tree's root zone extends beyond branches. Water entire root zone.



6"  
12"  
18"  
24"

# Landscape watering tips

4. Use soaker hoses or drip irrigation
5. Use thick layers of organic mulch
6. Check to see how much water your plants are getting

Q: How can you find out how much water your plants are getting?

# Landscape watering tips

A: To find out how much water:

- Dig into soil a few hours after watering to see how deep water has reached
- Can use trowel, screwdriver, metal rod or soil probe

# Landscape watering tips

7. Group plants with similar water needs together
8. Plants only need one inch of water per week
9. Use a timer
10. Water when it's cool (morning is best)

# Lawn watering tips

1. Water slowly, or start and stop sprinkler, so water penetrates
2. Don't water the sidewalk
3. Measure your sprinkler's output
4. Lawns only need one inch per week, incl. rain

Q: How do you know if your lawn is getting one inch of water?

# Lawn watering tips

A: How do you know if your lawn is getting one inch of water?

- Position some shallow containers out in yard.
- Turn on sprinkler for a set time.
- Turn off water and use a ruler to measure amounts in each container.
- Add them together and take an average.

# Lawn watering tips

To help your lawn absorb & retain water:

5. Aerate lawn in spring or fall
6. Use a mulch mower if possible

# Tips for healthy plants & fewer pest problems

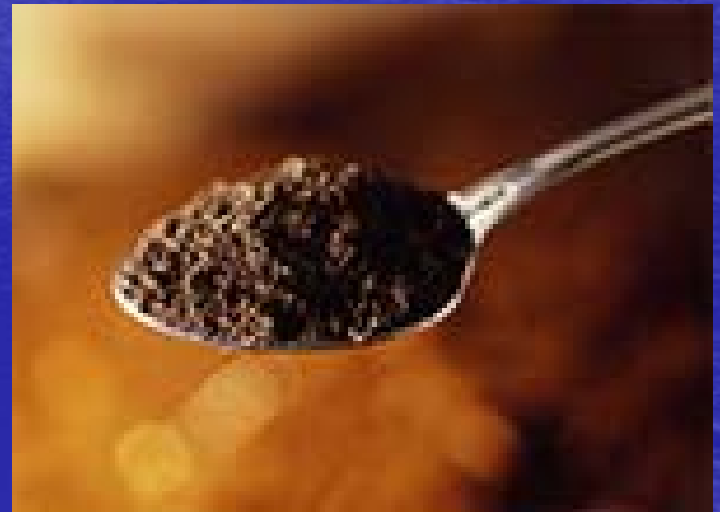
Q: What's the most important action you can take for:

- Healthier plants?
- Reduced pest problems?

# Tips for healthy plants & fewer pest problems

A: The most important action: Feed your soil!

- Over 4 billion micro-organisms in teaspoon of healthy soil
- It's like getting billions of free helpers
- Pests tend to attract stressed plants



# Tips for healthy plants & fewer pest problems

## 1. Enrich your soil before planting

- Amend entire growing bed with compost
- Fertilize with natural organic or slow-release fertilizers

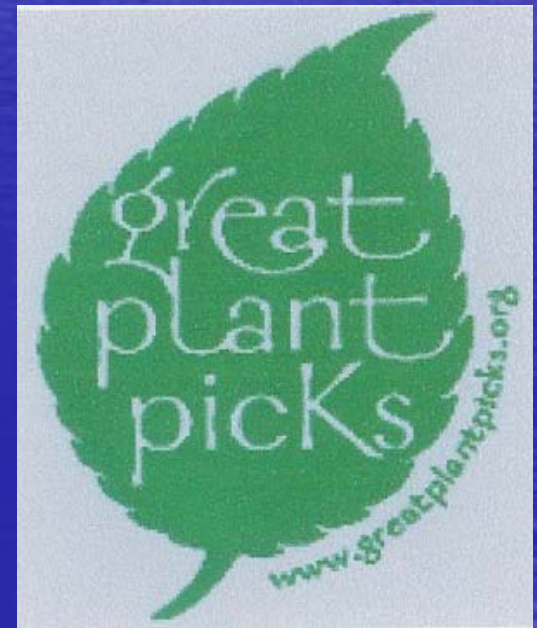
## 2. Use mulch (compost, wood chips)

- Feeds plants
- Reduces weeds
- Reduces water use

# Tips for healthy plants & fewer pest problems

## 3. Choose plants that are insect- and disease-resistant

- [www.greatplantpicks.org](http://www.greatplantpicks.org)
- Right Plant, Right Place
- Local nursery staff



# Tips for healthy plants & fewer pest problems

4. Plant right for your site: sun, soil conditions
5. Give plants proper water, nutrients
6. Reduce pest habitat

# What if you have a pest problem?

1. What damage do you see?
2. What is the cause?
  - Drought stress?
  - Insect?
  - Disease?
3. Changes in plant care can fix most problems

# Least-toxic methods for managing pests

- Physical/cultural controls
  - Hand removal
  - Traps
  - Barriers
- Biological controls
  - Encourage beneficial insects
  - Import predators
- Least-toxic chemical controls
  - Soaps
  - Horticultural oils
  - Careful spot sprays
- Evaluate your control method

# Fertilize your lawn carefully

Q: What do these numbers mean on a fertilizer bag?

- 16-16-16
- 8-2-4
- 20-0-0

# Fertilize your lawn carefully

A: What do these numbers mean on a fertilizer bag?

- N-P-K ratio: nitrogen-phosphorus-potassium
- **Nitrogen** for rapid growth
- **Phosphorus** for blooming, root growth
- **Potassium** for vigor, disease resistance

# Fertilize your lawn carefully

- Higher numbers (e.g., 16-16-16) are quick-release: quick green-up, quickly depleted
- Lower numbers (e.g., 8-2-4) are slow-release, feed your lawn slowly
- Natural-organic fertilizers feed soil microorganisms

# Reduce impervious surfaces

- Minimize lawn areas
- Direct rainwater runoff to landscaped areas
- Consider installing swales, rain gardens, green roofs
- Sweep drives & walks
- Use porous pavement

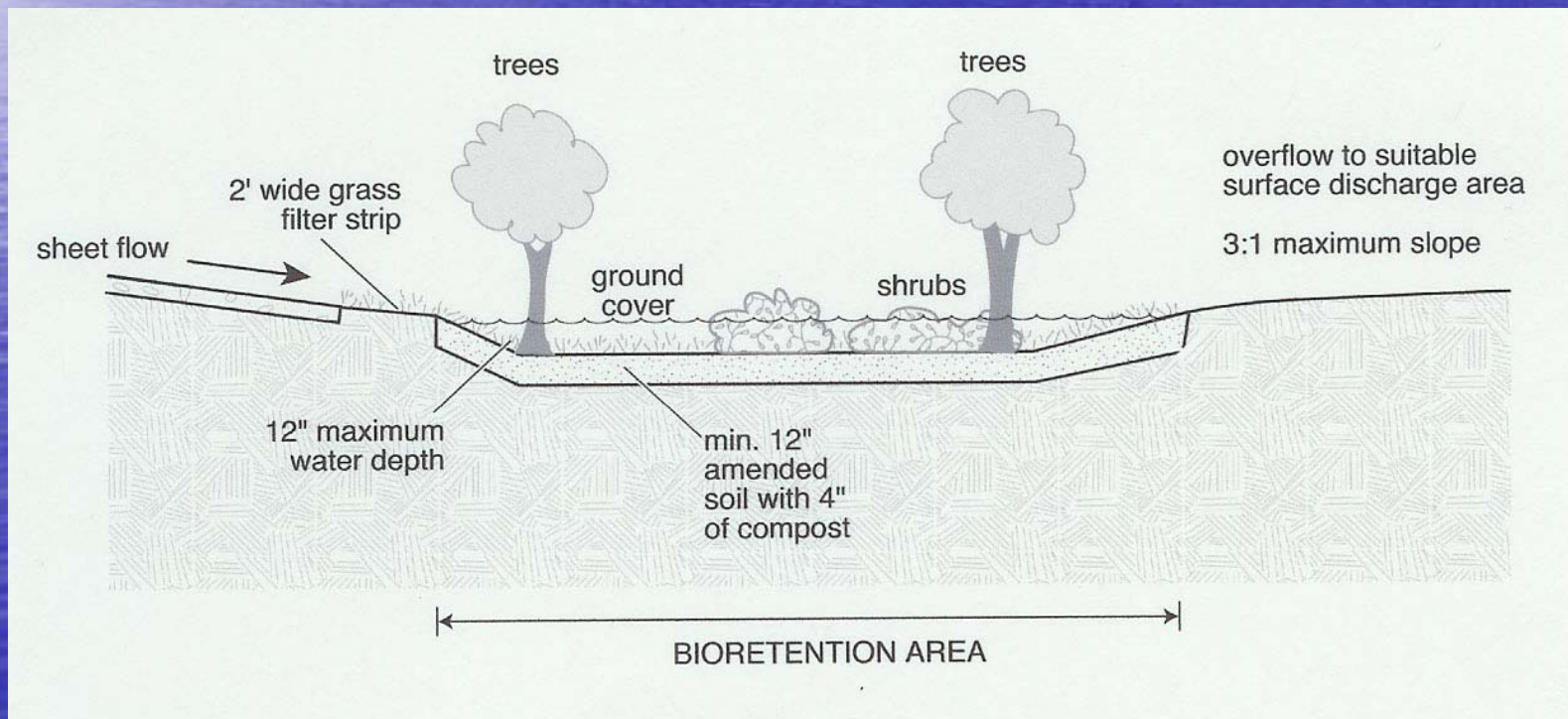
# Detention swales



98% reduction in stormwater volume during storm event!

# Swales, rain gardens

- Retain water to improve recharge, reduce runoff



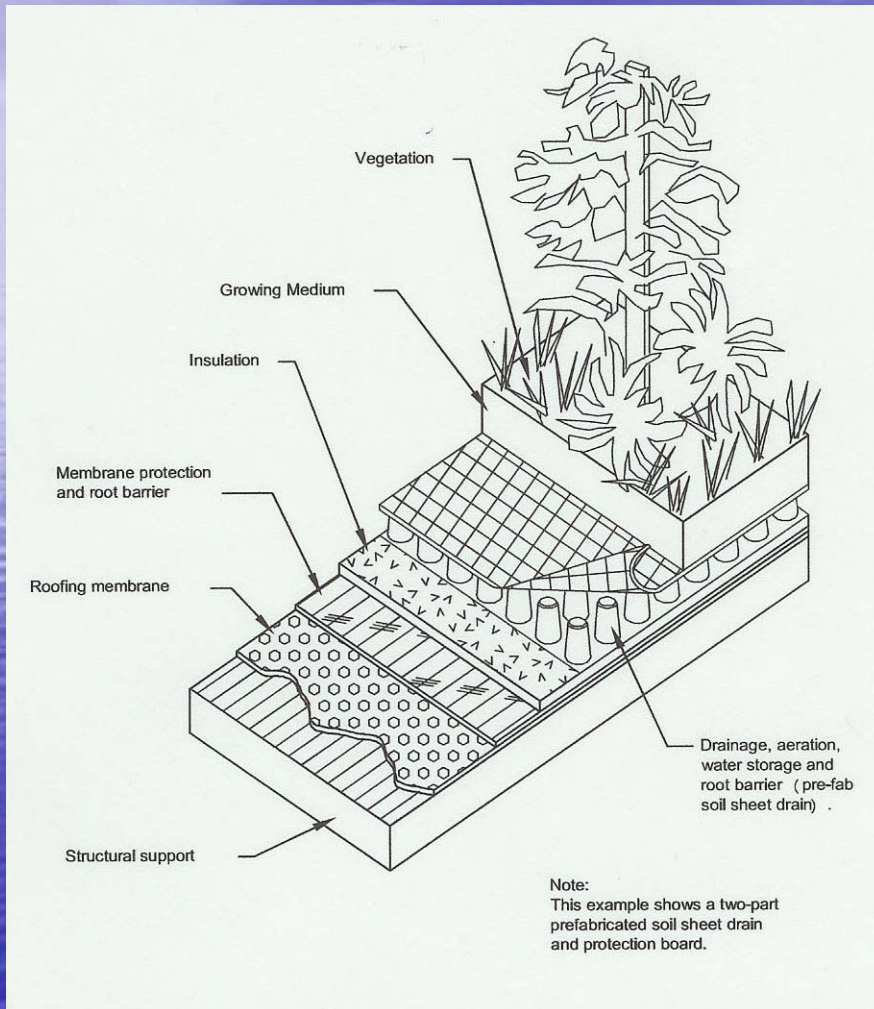
# Swales, rain gardens



# Porous pavement



# Green roofs



- Growth medium is critical
- Plants: sedums, desert plants

# Help reduce global warming

- Drive your car less
- Buy an efficient car
- Buy more efficient appliances (saves water too)
  - Washers, dishwashers, under-sink hot water heaters
- Check out [www.climatesolutions.org](http://www.climatesolutions.org)

# What will you do?

- What is one new action you will take to protect your drinking water?

"I never drink water. I'm afraid it will become habit-forming."

*--W.C. Fields*

"Water is life's mater and matrix, mother and medium. There is no life without water."

*--Albert Szent-Gyorgyi, Hungarian biochemist,  
1937 Nobel Prize for Medicine*